SECURING ARIZONA'S WATER FUTURE

OFFICE OF THE GOVERNOR
DOUG DUCEY

Arizona's Water Future

Honoring Our History
Securing Our Future

Arizona is a renowned leader in water management thanks to more than a century of careful planning, sound decision-making, and effective governance from great leaders like Carl Hayden, Mo Udall, John Rhodes, Bruce Babbitt, Stan Turley, Jon Kyl and others.

Water is one of the most vital resources of our state, and a key factor in the health and strength of our economy.

Historically, it's been imperative that Arizona fight for our fair share of this precious resource and that we use what we do have efficiently and intelligently.

As Western states face new challenges related to water supplies, Arizonans expect legislative and executive leadership to work together with stakeholders and follow the path of the leaders before them to secure Arizona's water future.

With droughts and declining water levels in the state's key water supplies, **the time to act is now.**

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> "Earning Arizona's reputation as a national leader in water management was no easy feat and it didn't happen by accident. It was the proactive nature of our predecessors, and our state's willingness to take-on complex issues. This session, we must follow their lead and put forward responsible policies that will ensure Arizona speaks with one-voice to secure the state's future for generations to come."
>
> — Governor Doug Ducey
> 2018 State of the State Address

Standing on the Shoulders of Giants

Significant Events in Arizona's Water History

1864 — The first Arizona Territorial Legislature adopts the Howell Code

The code establishes *prior appropriation* for surface water, establishing that the first to take use of the water has the priority to use the water for the same purpose, over newer water users.

1902 — President Theodore Roosevelt signs the National Reclamation Act

The Act recognizes that a key component to Western growth and development is constructing a system of irrigation works for the storage, diversion and development of water. The Act provides funding for irrigation projects in the Western states including construction of the Roosevelt Dam, and results in the creation of the U.S. Reclamation Service (later the Bureau of Reclamation).

1903 — Creation of the Salt River Project

Salt River Project, based in Phoenix, is established as the nation's first multipurpose federal reclamation project authorized under the National Reclamation Act. Today, SRP is one of the Arizona's largest water suppliers to the Phoenix Metropolitan area.

1911 — Construction of the Roosevelt Dam is Completed

The structure is built by the Bureau of Reclamation. It is operated and maintained by the Salt River Project.

1919 —Arizona Legislature Adopts the Public Water Code

This law requires that a person apply for and obtain a permit in order to appropriate surface water, rather than the previous method of merely asserting beneficial use.

1922 — Colorado River Compact is Established

The compact among Arizona, Colorado, New Mexico, Utah, Wyoming, Nevada, and California, divided the Colorado River Basin into an Upper and Lower River Basin, and appropriates 7.5 million acre feet of Colorado River water per year to each basin. Arizona refuses to ratify the Compact over concerns about the allocation of water among states.

1928—Congress Passes the Boulder Canyon Project Act

The Act designates the Secretary of the Interior as the contracting authority for the Colorado River, approves construction of the Hoover Dam on the condition that the Colorado River Compact is ratified, and authorizes approval of the Colorado River Compact without Arizona's approval.

1935 — Completion of the Hoover Dam/Creation of Lake Mead

The dam stores water for use by the Lower Basin states, controls flooding, improves navigation, regulates the flow of the Colorado River, and generates hydroelectricity. The reservoir created by the dam is Lake Mead.

1944 — The Mexican Water Treaty is Signed

The United States and Mexico sign a treaty providing for an annual allocation of Colorado River water to Mexico of 1.5 million acre-feet.

1944 — Arizona Approves the Colorado River Compact

Governor Sidney Preston Osborn announces a policy shift in Arizona's position on matters relating to the Colorado River leading to the State's approval of the Colorado River Compact. This action clears the path for delivery of Colorado River water to central and southern Arizona (Central Arizona Project). Arizona contracts with the Secretary of the Interior for the annual delivery of the State's full entitlement of 2.8 million acre-feet of Colorado River water. Contracts between the Secretary of the Interior and all Arizona water users are subject to the terms of this contract.

1945 - 1948 — Arizona Legislature Passes first Groundwater Code Legislation

In response to warnings by the Bureau of Reclamation that the Central Arizona Project would not be approved without restrictions on groundwater use. The legislation requires the registration of wells throughout the State (1945), and prohibits the drilling of new irrigation wells in ten designated Critical Groundwater Areas (1948).

1963 — Supreme Court Upholds the Boulder Canyon Project of 1928

The Court rules in favor of Arizona in a lawsuit filed by Arizona against California disputing California's claims to Colorado River waters in the Lower Basin. The decision allowed each state exclusive use of their respective tributary water, a key reason Arizona did not initially ratify the Colorado River Compact. The decision also secured water rights for Indian Reservations and other federal lands. Finally, the decision establishes the Secretary of the Interior as the Water Master of the Colorado River below Lee Ferry, granting the Secretary broad discretion, including the discretion to reduce the Lower Basin states' allocations during times of shortage with some limitations.

1966 — Congress Passes the Land and Water Conservation Fund Act

President Lyndon B. Johnson signs the Act championed by Arizona Congressmen Mo Udall, which protects federal land and water and incentives states to develop public parks and recreation. Since passage, the Fund has resulted in over 2.7 million acres of land protected and the creation of over $40,000 public parks throughout the nation.

1966 — Completion of Glen Canyon Dam/Creation of Lake Powell

The dam regulates the flow of Colorado River water from the Upper Basin to the Lower Basin, controls floods, stores water and produces hydroelectricity. The reservoir created by the dam is Lake Powell.

1968 —Congresses passes the Colorado River Basin Project Act

Following persistent leadership by Arizona Congressmen John Rhodes and Mo Udall and Arizona US Senator Carl Hayden, President Lyndon B. Johnson signs the Act authorizing the Central Arizona Project (CAP). Upon signing, the President proclaimed the day "Carl Hayden Day" at the White House to commemorate the passage. In exchange for gaining California's support of the Act, Arizona agreed that the Central Arizona Project would be the first to take reductions during times of shortage.

1971 - Arizona Legislature Creates the Central Arizona Water Conservation District (CAWCD)

The CAWCD is created to repay the federal government for the State's share of the cost of the Central Arizona Project (CAP) and to operate the CAP canal.

1980 — Arizona Legislature Passes the Groundwater Management Act

Governor Bruce Babbitt signs the Act, championed by legislative leadership including Stan Turley, Burton Barr, and Alfredo Gutierrez, implementing the recommendations of the Groundwater Management Study Commission, composed of city, mine and agriculture stakeholders. The Act establishes the Arizona Department of Water Resources (ADWR) to administer the provisions of the Act, and gives ADWR jurisdiction over surface water and responsibility for representing the State on Colorado River issues.

1993 — Establishment of the Central Arizona Groundwater Replenishment District (CAGRD)

Legislation requires CAWCD to replenish groundwater used by new subdivisions in Maricopa, Pinal and Pima Counties consistent with the 1980 Groundwater Management Act. In this role, CAWCD is referred to as the CAGRD.

1995 - Assured and Adequate Water Supply Rules Adopted

ADWR establishes criteria requiring a developer to demonstrate 100-year assured or adequate water supply, before land is sold for housing subdivisions in areas where groundwater depletion is most severe, designated as Active Management Areas (AMAs).

1996 - Establishment of the Arizona Water Bank Authority

The AWBA is established to protect Arizona's cities, towns, and tribes from shortages to their Colorado River allotments by storing unused water underground. The AWBA is also the sole entity authorized by the Arizona Legislature to store Colorado River water on behalf of California and Nevada.

2004—Congress Passes the Arizona Water Settlements Act

President George W. Bush signs legislation led by Arizona US Senator Jon Kyl, approving an agreement for the amount of Arizona's CAP repayment obligation. The Act also settles water rights claims of the Gila River Indian Community and the Tohono O'odham Nation and reallocates 67,300 acre-feet of unallocated CAP water to the Secretary of the Interior for use in future Indian water rights settlements in Arizona.

2007—Arizona Legislature Enacts Mandatory Water Adequacy

Governor Janet Napolitano signs a bipartisan measure authorizing counties and cities outside of AMAs to adopt a requirement that new subdivisions demonstrate a 100-year adequate water supply, similar to the assured water supply requirement in the AMAs. Cochise and Yuma Counties, as well as several cities, subsequently adopt the requirement.

Taking Action
Our Efforts to Date

Arizona's rich water history should serve as the blueprint for addressing the water challenges we face today.

Since taking office in 2015, Governor Ducey has prioritized Arizona's water future as one of the most crucial policy issues facing the state. His administration has engaged citizens, stakeholders and elected leaders to ensure the State works together to achieve water security for all Arizonans.

Protecting Our Resources

In 2016, Governor Ducey vetoed two pieces of legislation that would have weakened consumer protections for home buyers and businesses by relaxing requirements to show adequate water supplies for new development in rural Arizona counties. Upon vetoing the legislation, the Governor stated, "Ensuring the certainty and sustainability of Arizona water is a top priority. I will not sign legislation that threatens Arizona's water future."

Investments to Strengthen Conservation Planning

ADWR is negotiating with representatives of California, Nevada and the U.S. Bureau of Reclamation to conserve water in Lake Mead, thereby reducing the likelihood of the lake dropping to critically low levels. Because Arizona will suffer most of the impact of any shortage, the State is also developing a plan with Arizona water users to conserve additional water in Lake Mead. The goal of this plan is to reduce the chance that Arizona will lose 11% of its Colorado River supply due to a shortage. In 2017, Governor Ducey signed a bill to invest $6 million in this plan over the next three years.

Working Together

Building on Arizona's history of engaging key stakeholders to establish a dynamic and innovative water strategy, Governor Ducey has focused on building a broad coalition of water stakeholders to address a variety of water supply challenges throughout the State. To date these efforts include:

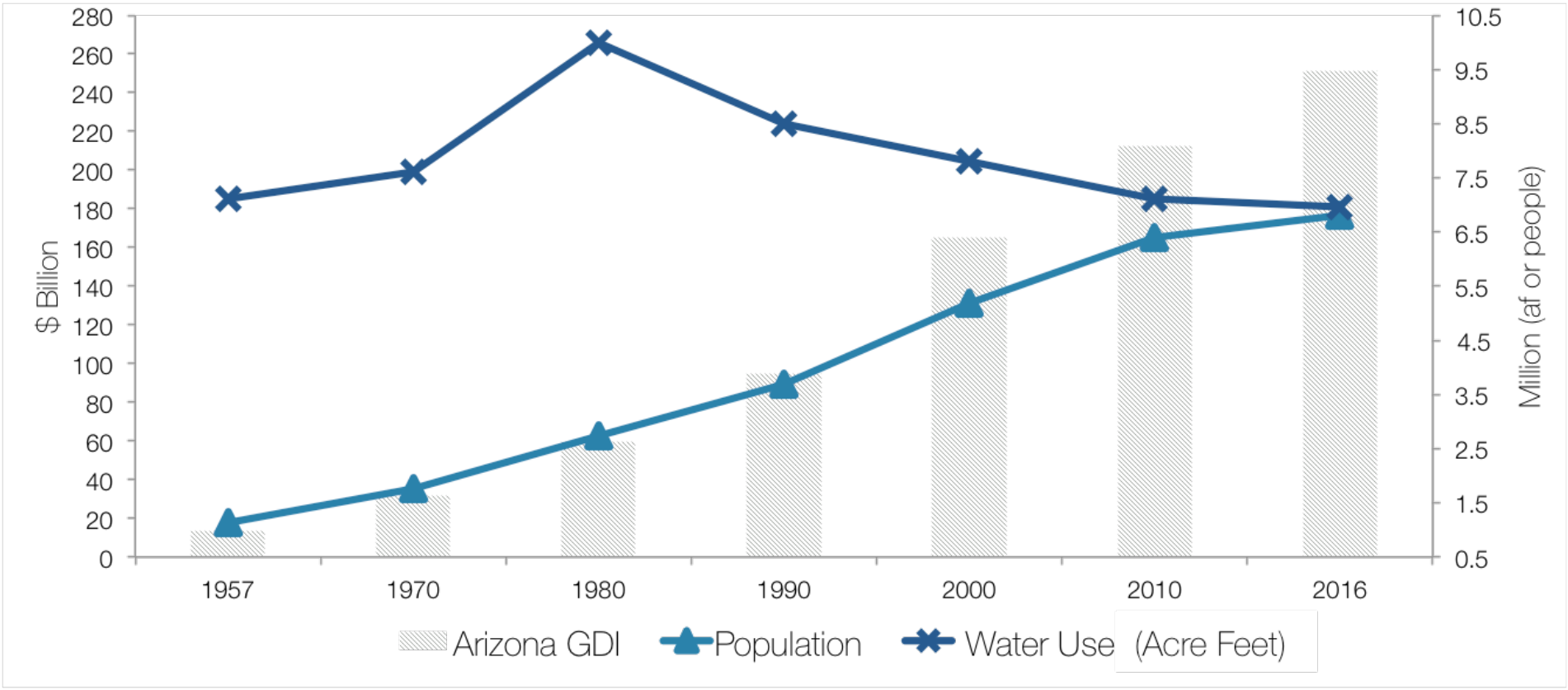
- In **2015**, the Governor established the Arizona Water Initiative. The two-track initiative engaged key stakeholders to create solutions that meet future water demands, identify long-term augmentation strategies and propose conservation opportunities.
- In **2017,** Governor Ducey signed legislation authorizing the State to approve documents related to provisions of Minute 323 between the United States and Mexico. The Minute designates Mexico as a full partner in the management of the Colorado River – receiving surpluses, taking shortages and conserving water in Lake Mead — and incentivizes continued drought contingency planning.
- During much of **2017**, the Governor continued efforts to engage stakeholders through meetings titled "Water Solutions Conversations" designed to address our most critical water challenges and to provide recommendations to the Legislature. The Governor is championing the recommendations developed through those conversations.

Results
Efficient, Intelligent Water Use

Since 1957, Arizona's population has grown nearly 500 percent, to 7 million residents today. The economy has drastically increased from a gross domestic income of $13.4 billion in 1957 to about $240 billion in 2015.

But as a result of Arizona's proactive management of its water resources, the State is now using *less* water than when Dwight D. Eisenhower was President.

Arizona Groundwater Use Water Use, Population, Economic Growth (1957-2016)



The Challenge We Face Today

Drought conditions on the Colorado River, declining Lake Mead water levels

The Colorado River provides water to portions of Colorado, New Mexico, Wyoming, Utah, Nevada, California, nearly all of Arizona, and Mexico. Lake Mead, a reservoir on the Colorado River, supplies water exclusively to Arizona, California, Nevada (collectively the Lower Basin states), and Mexico.

At its maximum, the lake can hold over 26 million acre-feet of water. **The last time the lake reached maximum capacity was 1983. Today the lake is less than 40% full.**

The Colorado River system has experienced severe drought conditions for more than 17 years. Over time, Lake Mead levels have continued to decline. Lake Mead water levels are important because they determine whether a shortage is declared in the State's Colorado River water supply.

A shortage is declared when, in August, Lake Mead is forecasted to be below an elevation of 1,075 feet at the end of the calendar year. On average, since 2016, the levels have hovered around 1,081 feet.

A shortage will trigger decreased delivery levels of water to Arizona, Nevada and Mexico. **Arizona, which relies most heavily on the Colorado River for its water supply, will face the most significant impact during shortage.**

Lower Basin States

1,222 feet

Maximum Lake Mead Water Level

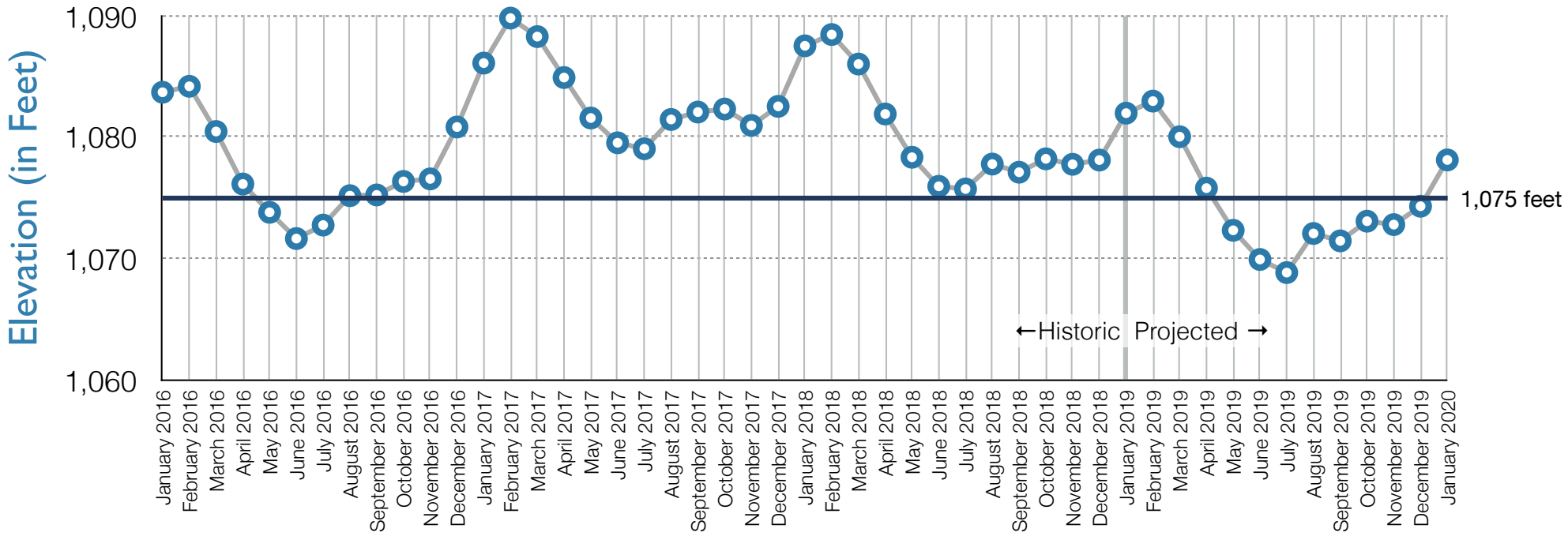
1,082 feet

Average Lake Mead Water Level in 2017

1,075 feet

The trigger for a water shortage, resulting in decreased water delivery for the State.

Historic and Projected Lake Mead Levels Based on a February 2018 24-Month Study



What factors impact water levels?

Lake levels are most impacted by:

- Precipitation that falls within the basin, resulting in runoff that flows into the Colorado River and reaches the reservoirs, including Lake Mead.
- The demand for water, such as the amount needed for agricultural and urban purposes.
- Reservoir operations and maintenance.

Probability of a Shortage on the Colorado River

Based on data from the Bureau of Reclamation, the probability of a water shortage on the Colorado River is increasingly likely over the next year, with a 17% chance in 2019 and 63% chance in 2022.

2018	2019	2020	2021	2022
0	17%	49%	58%	63%

2018 Legislative Solution

Strategic Conservation, Statewide Forbearance

Responsible Efforts to Safeguard Colorado River Supplies

The threat of a water shortage on the Colorado River and in Lake Mead is immediate. Data from the Bureau of Reclamation indicates that Lake Mead could reach the critically low elevation of 1,025 feet in just eight years. Water levels below 1,075 feet would first trigger reductions in Arizona's water supply for agriculture in Maricopa, Pinal, and Pima counties. If water levels fall below 1,025 feet, Arizona's entire Colorado River supply would be at risk.

Responsible Conservation Efforts

Building on Arizona's history of responsible conservation initiatives, our plan incentivizes and facilitates the voluntary conservation of water in Lake Mead. These conservation efforts could include, for example, voluntarily lining canals or temporarily fallowing agricultural land (the practice of leaving land unseeded).

Forbearance of Conserved Water

Forbearance ensures that water that has been voluntarily conserved by a Colorado River water contractor remains in Lake Mead. Under our plan, as a contractor identifies conservation opportunities and commits to using less water, the State, through the Director of the ADWR, will forbear delivery of that water, keeping that water in Lake Mead.

Keeping Lake Mead Levels above 1,075 ft

The water stored in Lake Mead through forbearance will contribute to higher lake elevations, reducing the likelihood of a shortage and protecting the State from the economic consequences of water delivery reductions.

Forbearance *is* Drought Contingency Planning

The tools of forbearance create conservation opportunities that conceivably could make an additional 600,000 acre feet of water available for conservation in Lake Mead. Those tools – Intentionally Created Surplus (ICS), Tribal ICS and system conservation – help accomplish the purpose of both interstate and in-Arizona drought-planning agreements by creating added capacity in Lake Mead.

Arizona Water Users Are Protected

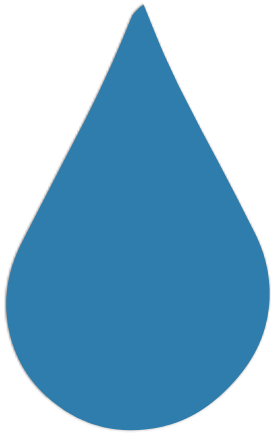
The Director of ADWR will only forbear the delivery of water that would have otherwise been used if not conserved. No water users would be negatively impacted by the forbearance of the water that is voluntarily conserved.

Expanding Forbearance to Benefit All Arizonans

Currently, the authority to forbear the delivery of water only resides with CAWCD. Our plan entrusts some of the authority to the Director of ADWR, who is best suited to consider statewide interests in making forbearance decisions. Our plan also provides transparency, allowing all residents of the State to provide input to the Director on any proposal to conserve water in Lake Mead.

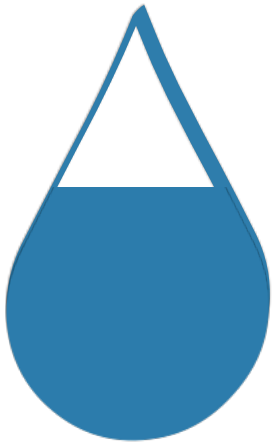
Example of Forbearance of Conserved Water

Current Use



The amount of water *Ashley Farms* currently uses each year.

Colorado River Conservation Program



Following the passage of 2018 legislative proposal, *Ashley Farms* reduces water usage by 20 percent by fallowing some of their fields. The Director of ADWR agrees to forbear the conserved water created through the reduction in water usage.

Forbearance

The conserved water remains in Lake Mead, contributing to higher lake levels and reducing the probability of shortage.

2018 Legislative Solution

Protecting Consumers through Responsible Groundwater Management

Assuring Sufficient Water Supplies for a Growing Population in a Booming Economy

Arizona has perfected the recipe for success: low taxes, light regulation, great public schools, superior quality of life — resulting in a growing population of over 7 million residents. Still, as a result of responsible management, Arizona uses less groundwater water today than it did in 1957 (see page 6). Our plan continues Arizona's legacy of promoting sustainable growth.

Strengthening the Groundwater Management Act

The 1980 Groundwater Management Act established Active Management Areas (AMAs), which are geographic areas that, at the time, had the most serious decline in groundwater levels. Within the five AMAs - Prescott, Phoenix, Pinal, Tucson, and Santa Cruz – groundwater use is regulated more strictly than in other areas of the State. Each AMA has a specific management goal. For the Prescott, Phoenix and Tucson AMAs, the goal is that by 2025, groundwater withdrawals will not cause long-term declines in the groundwater supplies. Progress of the AMAs toward these goals fluctuates.

Our proposal would establish an advisory committee for each AMA to monitor progress of the AMA toward achieving its management goal. To ensure we never lose focus of responsible management, the plan would also create three additional 10 year management periods beginning in 2025 for all AMAs and require the director of ADWR to adopt management plans for each of those periods.

Extinguishment Credit and Groundwater Allowance Reform

Under ADWR's rules for an assured water supply, new subdivisions must generally use renewable supplies. A subdivision may use groundwater, but that water must be replaced in the aquifer (replenished), with some significant exceptions.

One such exception is an "extinguishment credit" – a credit to use a volume of unreplenished groundwater created when farmland is taken out of production. Another exception is a "groundwater allowance" – a volume of unreplenished groundwater calculated as a percentage of the subdivision's projected water demand.

Water leaders in the Pinal AMA recognized that continued reliance on unreplenished groundwater for new development is unsustainable and sought to reduce that use. ADWR worked with stakeholders and developed a plan to amend the rules regarding the calculation of extinguishment credits and the groundwater allowance to encourage the use of renewable supplies. In 2013, local leaders gathered to further refine this plan. Our proposal mirrors the locally-devised solution and balances the need for supporting future growth while preserving groundwater supplies for existing agricultural and municipal users.

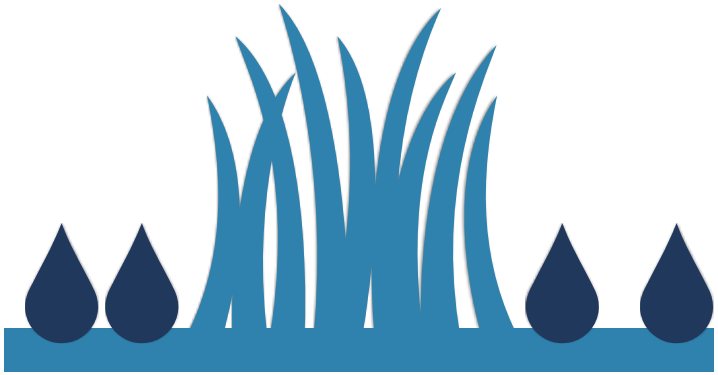
Conservation Through Irrigation in Above-Ground Containers

Embracing New Technology

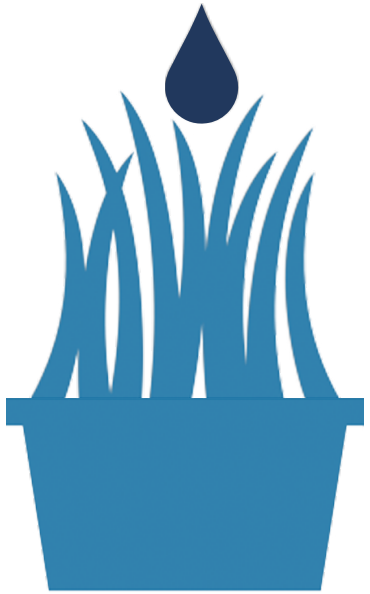
Thanks to advances in technology, the irrigation of plants in above-ground containers is presenting new opportunities for agricultural efficiency and conservation. The watering of plants in containers can be a more efficient use of water than watering plants in the ground because the plants are watered through advanced technology “drip” systems rather than through flood irrigation or sprinklers. In AMAs current law does not allow irrigation grandfathered rights to be used for the practice of watering plants in containers. Stakeholders have asked that this restriction be lifted.

Our proposal responds to those requests, allowing for irrigation grandfathered rights to be used for this new and more efficient agricultural method.

Ground Irrigation Watering



Above Ground Watering



2018 Legislative Solution

Speaking with One Voice

Requiring Approval for the Negotiation of Interstate Agreements Regarding Colorado River Water

Decisions about Arizona's water supply affect the entire state and should be made after considering the interests of the entire State. Recently, CAWCD attempted to engage in an agreement to sell water supplies to California, without statewide input or statutory authority.

Our plan adds protections that would require CAWCD to obtain approval from ADWR before negotiating or entering into deals involving the interstate transfer of Colorado River water. These types of agreements could have long-range impacts on all Arizona water users and should only be entered into after statewide scrutiny.

Ensuring Accountability

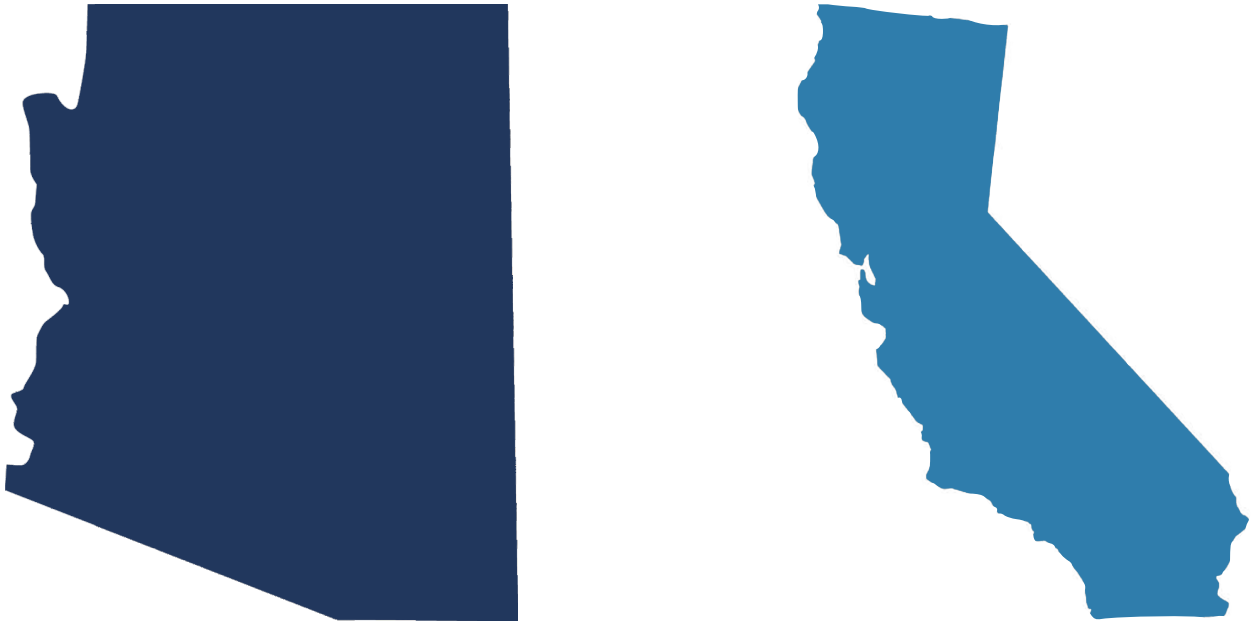
Clarifying That CAWCD Does Not Have Sovereign Immunity

In a recent 9th Circuit Case, Gressett v. CAWCD, the Central Arizona Water Conservation District asserted it was an "arm of the State" entitled to sovereign immunity under the US Constitution. Claiming sovereign immunity is an extraordinary assertion, as it means the entity cannot be sued in federal court. Sovereign immunity would restrict the ability for any impacted party to take legal action against the entity, regardless of whether the claim had merit.

Our proposal clarifies that CAWCD is not an arm of the State and prohibits CAWCD from asserting sovereign immunity, thereby assuring that it is accountable to its customers and other Arizona water users.

Arizona First

A Cautionary Tale: How One Entity Attempted to Sell Arizona's Water Supply to California without Authority or Approval



In 2015, CAWCD negotiated with a water agency in California to sell 60,000 acre-feet of Arizona's water supply. The sale was never carried out due to objections raised by ADWR and the Governor's Office. Had the deal gone through, CAWCD would have received $17 million in payment from California. Projections indicated that the sale of the water would have devastated Lake Mead, forcing the lake level to go below 1,075 feet and triggering statewide reductions in Arizona's water supply.

Our plan adds protections that would require CAWCD to obtain approval from ADWR before negotiating or entering into deals involving the interstate transfer of Colorado River water.

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